

FIG. 1

- 101 image input unit;
- 101a to 101n camera;
- 102 face region detecting unit;
- 103 face feature extracting unit;
- 104 person recognizing unit;
- 105 registration information holding unit;
- 106 output apparatus;

**FIG. 3**

301 image input unit;  
301a to 301n camera;  
302a to 302n face region detecting unit;  
304 photograph judging unit;  
303a to 303n face feature extracting unit;  
305 person recognizing unit;  
306 registration information holding unit;  
307 output apparatus;

FIG. 4

401 image input unit;  
401a to 401n camera;  
404a to 404n face region detecting unit;  
403 face feature point predicting unit;  
405 face feature extracting unit;  
402a to 402n face feature point detecting unit;  
406 person recognizing unit;  
407 registration information holding unit;  
408 output apparatus;

FIG. 5

501 image input unit;  
501a to 501n camera;  
502 face region detecting unit;  
503 face direction predicting unit;  
504 registration information holding unit;  
505 output apparatus;

**FIG. 7**

- S1      input images from "n" sets of cameras;**
- S2      extract face feature points;**
- S3      feature point which could not be extracted is present?**
- S4      at least two pieces of respective feature points can be detected?**
- S5      calculate three-dimensional positions of feature points whose corresponding  
         relationship can be established;**
- S6      convert three-dimensional coordinate into feature points viewed from other  
         cameras based upon three-dimensional positions;**
- S7      extraction of feature point succeeds;**
- S8      predicting process operation is accomplished;**
- S9      extraction of feature point fails;**

FIG. 9

- 901a camera 1, face detection result,  
user "A" --- bad, user "B" --- good;
- 901b camera 2, face detection result,  
user "A" ---good, user "B" --- bad;
- 901c camera 3, face detection result,  
user "A" --- good, user "B" --- bad;
- 902 user "A";
- 903 user "B";

FIG. 10

- 1001 image input unit;
- 1001a to 1001n camera
- 1002a to 1002n face feature point detecting unit;
- 1003 others mixture judging unit;

**FIG. 11**

1001a to 1001n camera

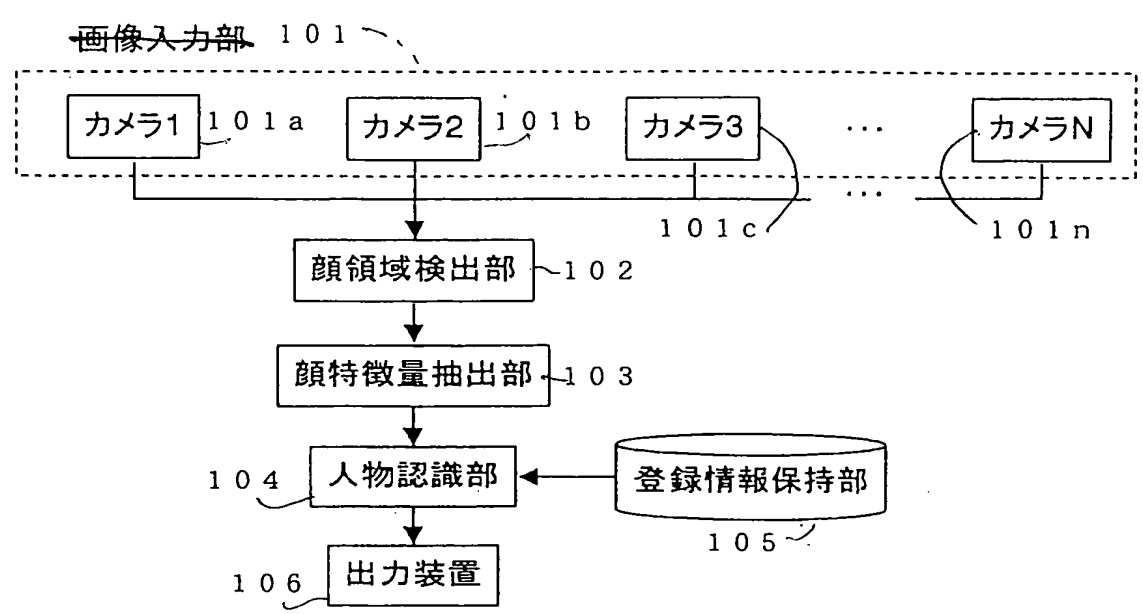
1002a to 1002n face feature point detecting unit;

1003 others mixture judging unit;

【書類名】 図面

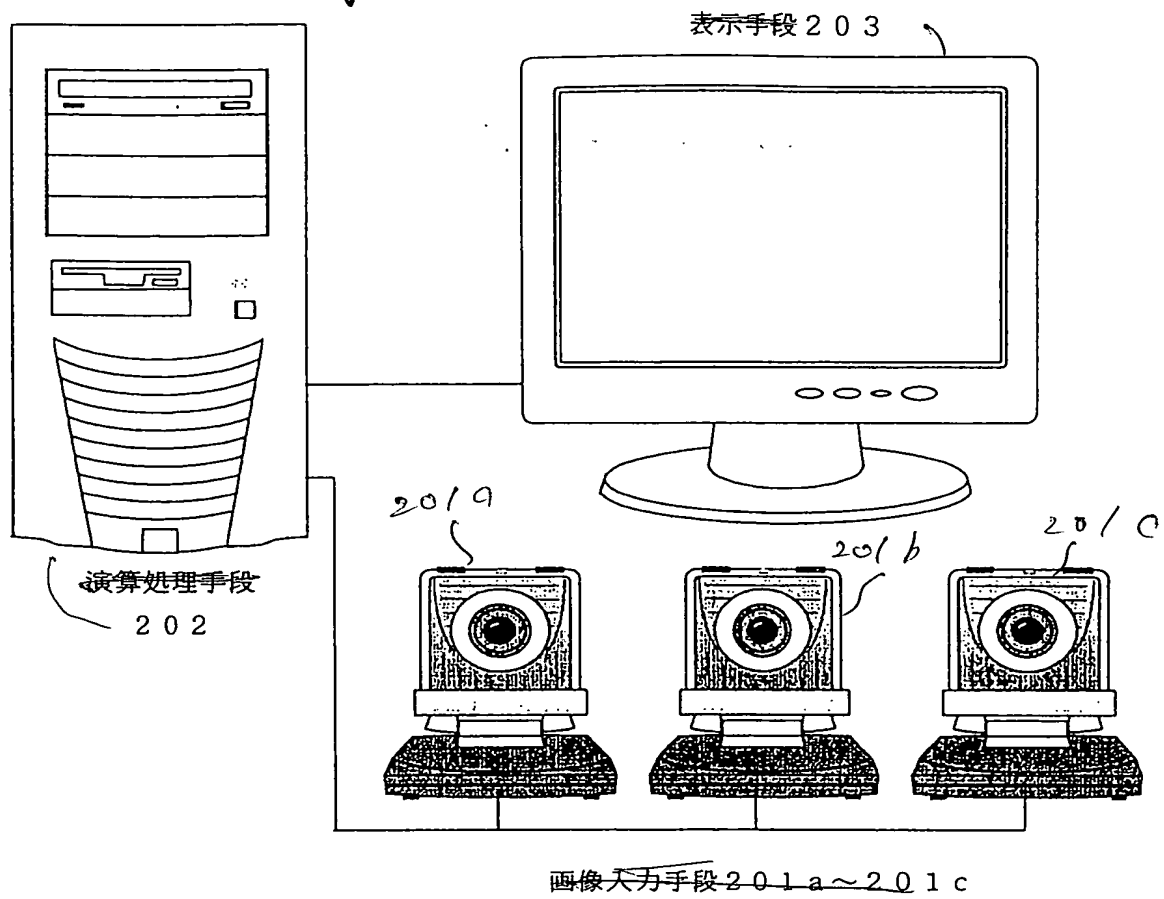
【図1】

Fig-1



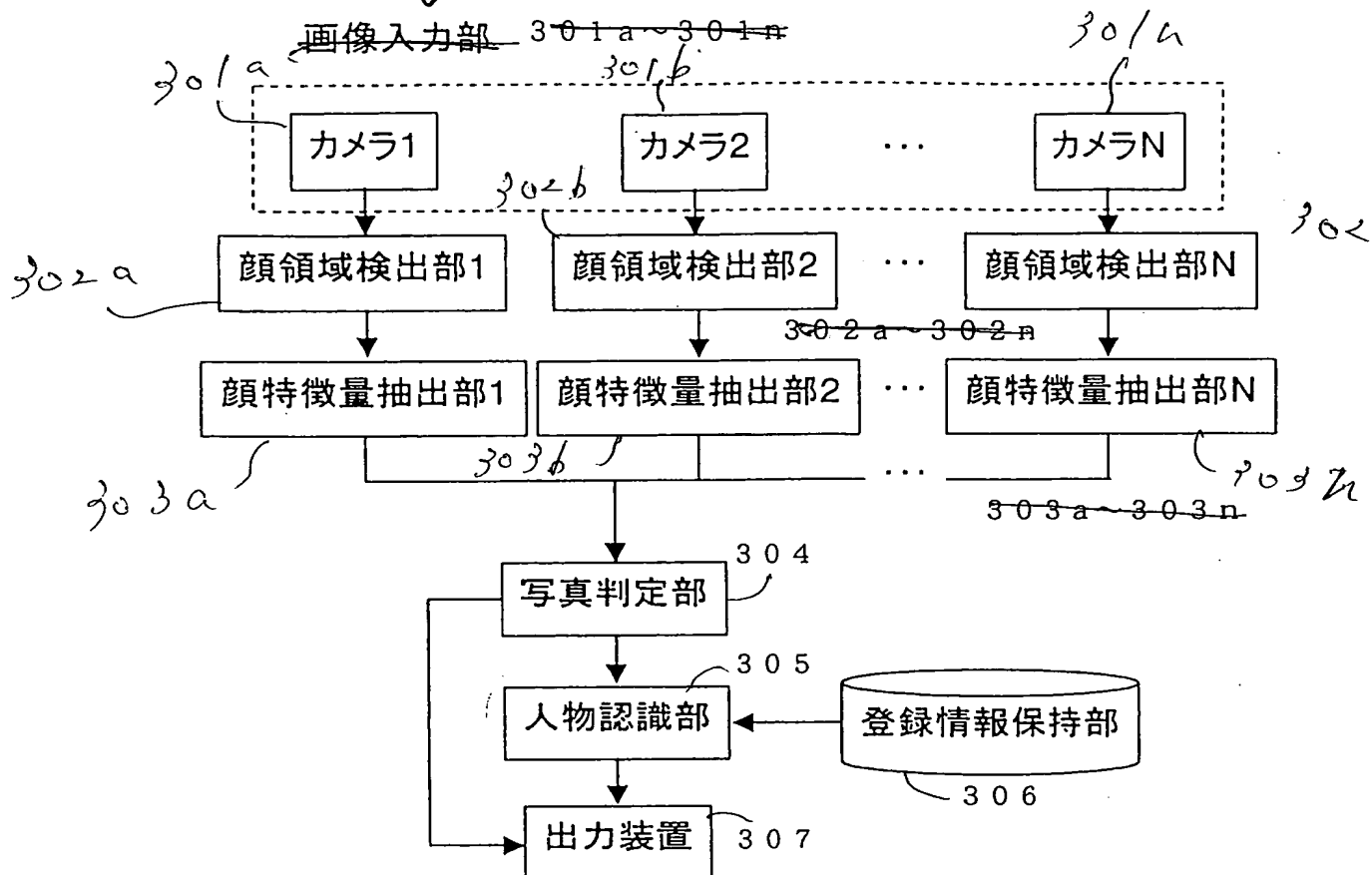
【図2】

Fig. 2

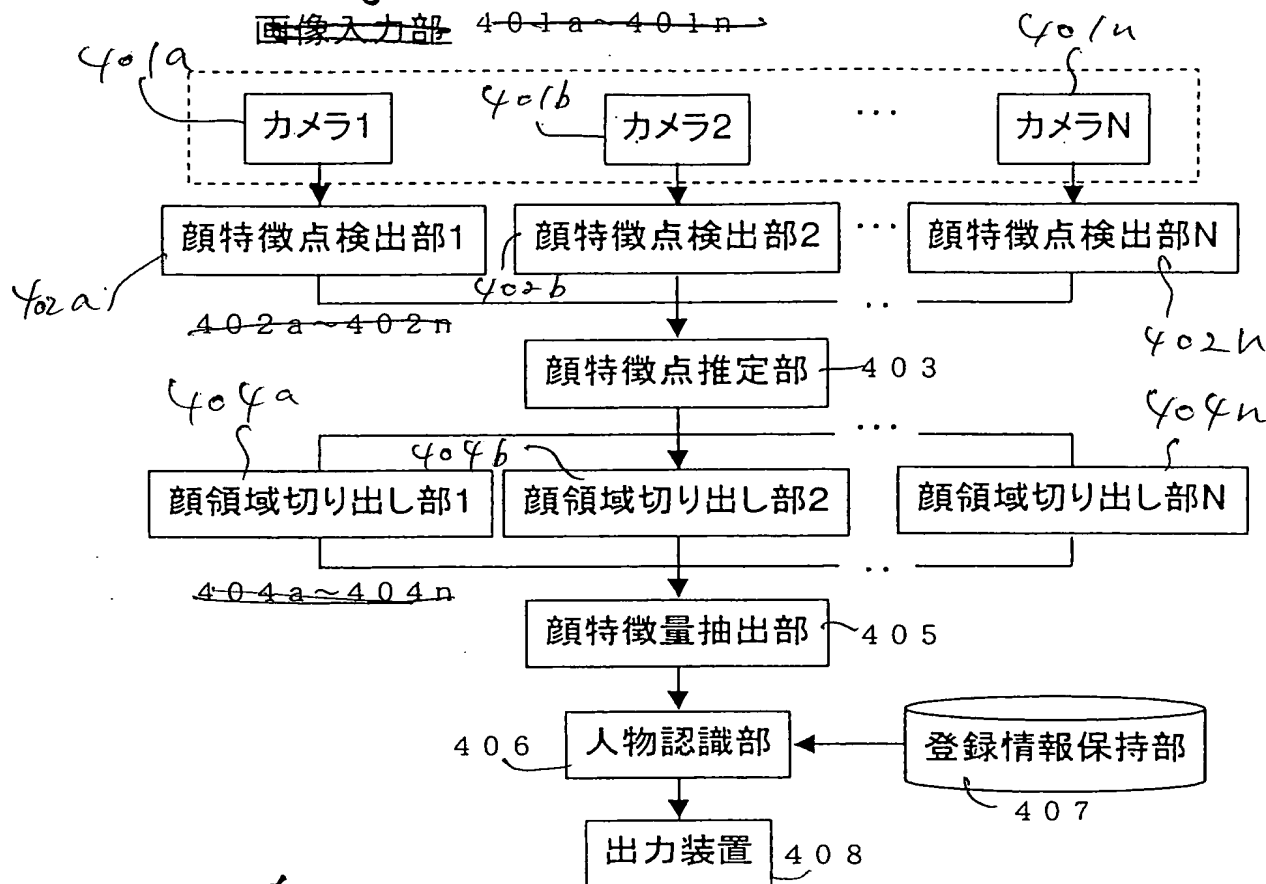




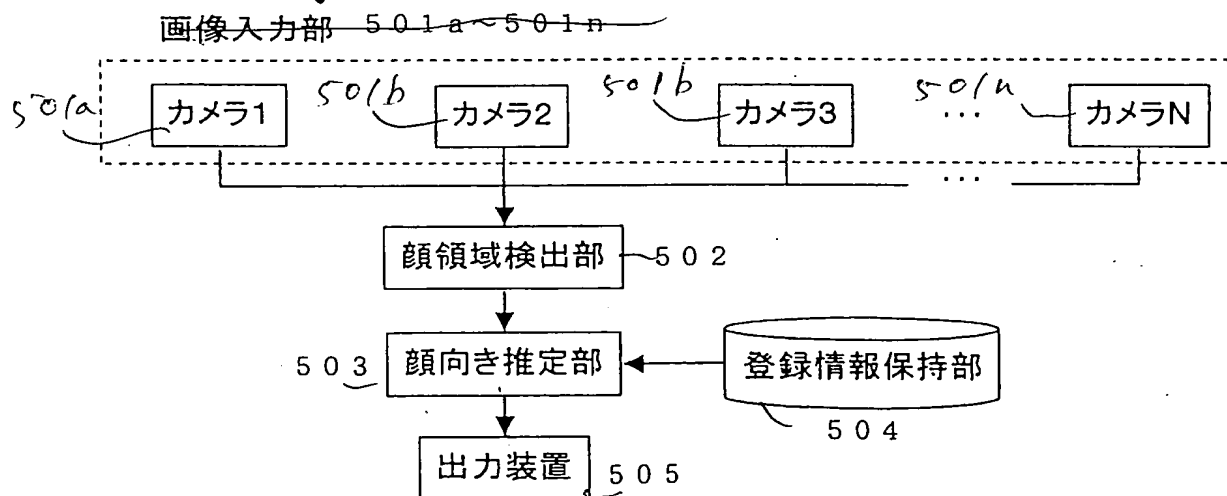
【図3】 Fig. 3



【図4】 Fig. 4

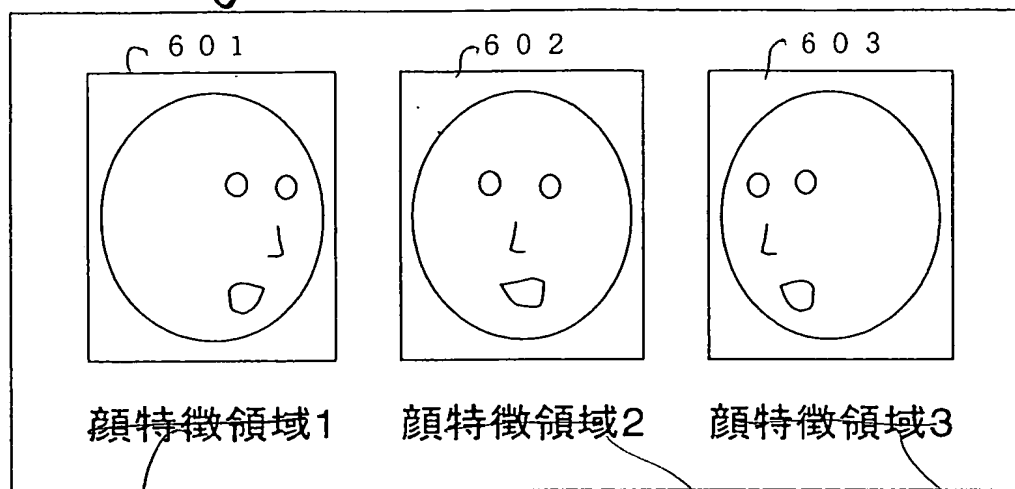


【図5】 Fig. 5



【図6】

Fig. 6



顔特徴領域1

顔特徴領域2

顔特徴領域3

顔特徴領域集合

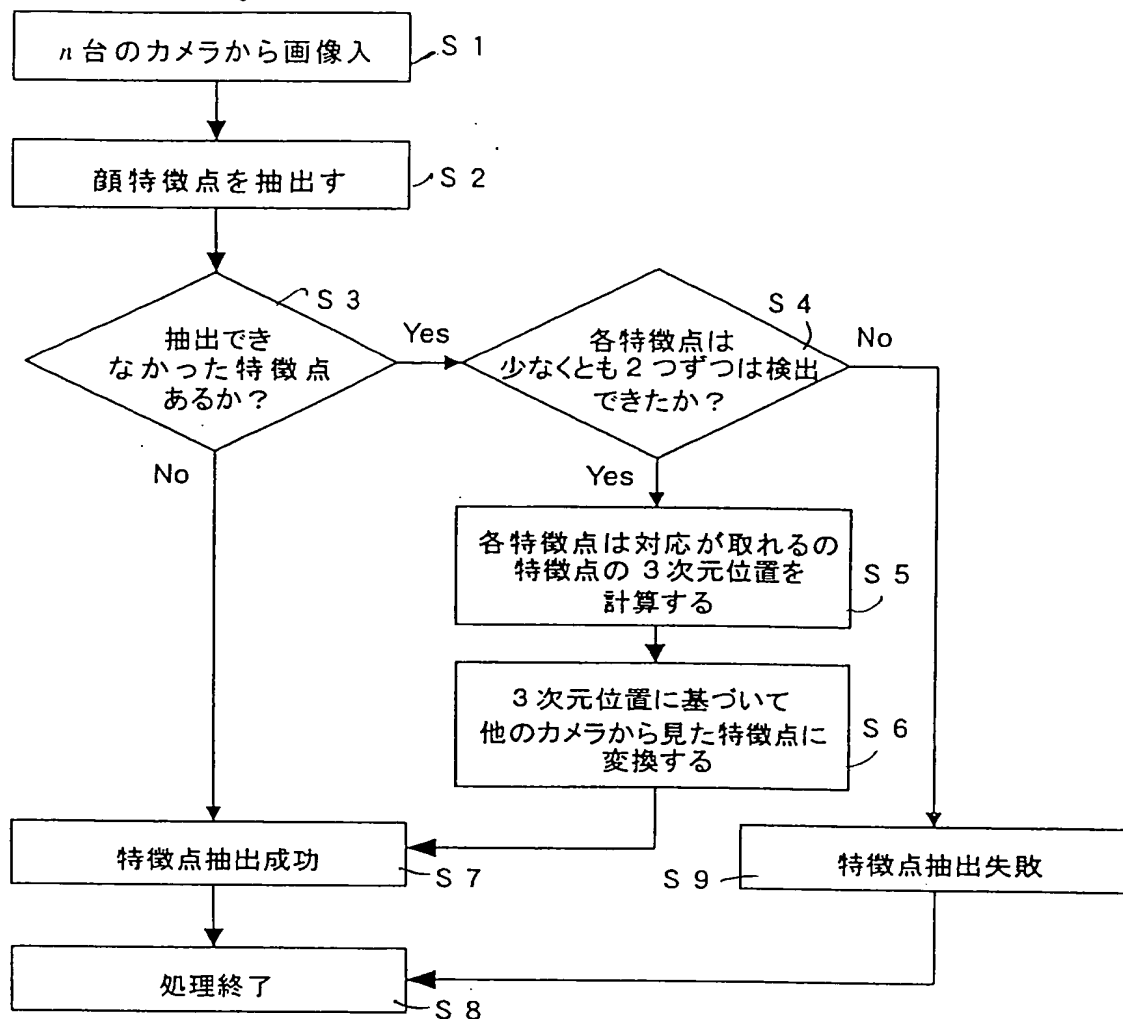
FACE  
FEATURE  
REGION 1

FACE FEATURE  
REGION SET

FACE  
FEATURE  
REGION 2

FACE  
FEATURE  
REGION 3

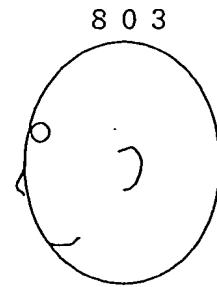
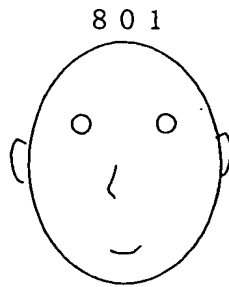
【図7】 Fig.7



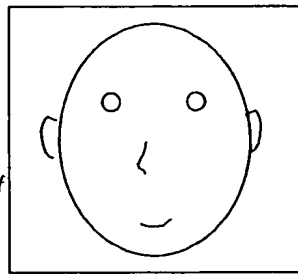
【図8】

Fig. 8

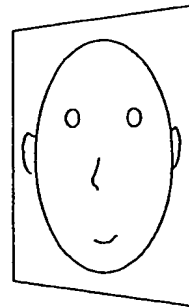
実際の顔  
ACTUAL  
FACES



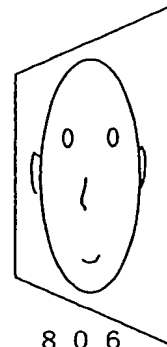
写真の顔  
PHOTOGRAPH  
FACES



804



805



806

【図9】

Fig. 9

カメラ1 顔検出結果

ユーザA ×

ユーザB ○

カメラ2 顔検出結果

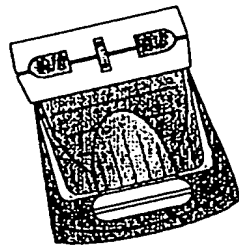
ユーザA ○

ユーザB ×

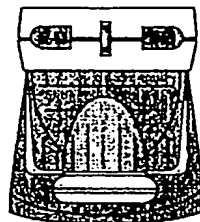
カメラ3 顔検出結果

ユーザA ○

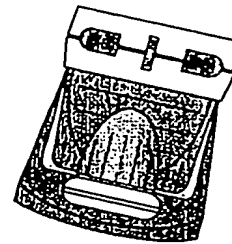
ユーザB ×



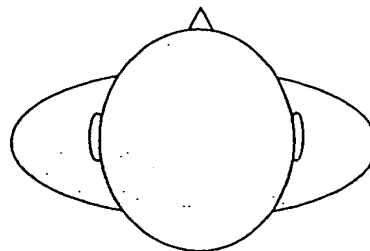
901a



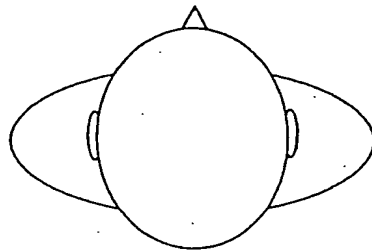
901b



901c



902:ユーザA



903:ユーザB

Fig. 10

【図10】

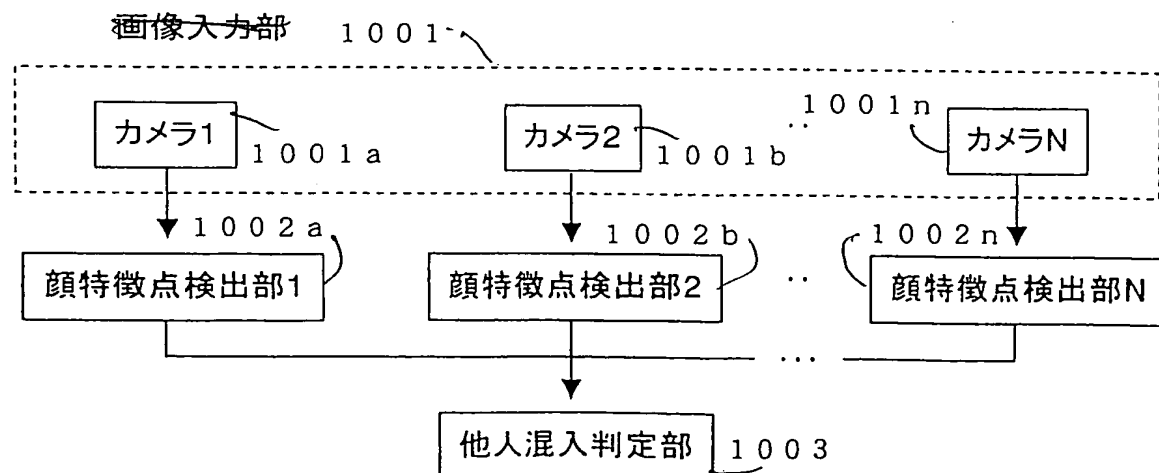


Fig. 11

